
UTILITY PATENT APPLICATION

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TITLE OF INVENTION: STORAGE DEVICE FOR BATHROOM IMPLEMENTS

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INVENTOR(S): Christopher J. Laux Cincinnati, OH
 Andrew Mendenhall Indianapolis, IN

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ASSIGNEE: Freudenberg Household Products LP Northlake, Illinois

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ATTORNEY: Courtney J. Miller / Calfee, Halter & Griswold LLP

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REG. NO.: 45,366

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CORRESPONDENCE Calfee, Halter & Griswold LLP
ADDRESS: 1100 Fifth Third Center
 21 East State Street
 Columbus, Ohio 43215

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TITLE OF THE INVENTION

STORAGE DEVICE FOR BATHROOM IMPLEMENTS

CROSS - REFERENCE TO RELATED APPLICATIONS

5 This patent application claims the benefit of U.S. Provisional Patent Application Serial No. 60/439,131 filed on January 10, 2003 and entitled "Bathroom Caddy," the disclosure of which is incorporated as if fully rewritten herein.

TECHNICAL FIELD OF THE INVENTION

10 The present invention relates generally to containers for home cleaning products, and more specifically to a device for storing a toilet brush and a plunger in a single enclosure.

STATEMENT REGARDING FEDERALLY FUNDED RESEARCH

15 This invention was not made by an agency of the United States Government nor under contract with an agency of the United States Government.

BACKGROUND OF THE INVENTION

20 Tools or implements designed for use in cleaning bathrooms are commonplace in most modern households. Cleaning implements used for sinks, bathtubs and toilets typically include brushes, sponges, and sink or toilet plungers. Brushes are often stored in a water-catching basin of some sort that is often placed to the side of the toilet and plungers are often
25 stored in a cabinet beneath the sink or in a location outside of or away from the bathroom. Thus, despite the fact that cleaning a toilet often requires more than one cleaning implement, the necessary tools are typically stored separate from one another, creating an inconvenience for the individual attempting to complete their cleaning tasks. Furthermore, in the event of a possible overflow, lack of quick and easy access to a plunger can result in significant damage
30 to the floor of the bathroom and any carpet, rugs or other items that may have been placed on the floor. Thus, there is a need for a storage device that houses both a brush and a plunger and that may be conveniently placed within a bathroom such that an individual may easily access either or both implements.

SUMMARY OF THE INVENTION

These and other deficiencies of the prior art are overcome by the present invention which provides a device for storing multiple bathroom implements in a compact arrangement in a relatively small enclosure that fits into narrow spaces. In the most general sense, the exemplary embodiment of the present invention includes a housing with four vertical walls, wherein one of the vertical walls, i.e., the front wall, is partly or mostly open. The housing also includes a closed or detachable base and an internal support member for receiving and supporting one of the cleaning implements. A panel is attached, by hinge means, to the bottom portion of the open side of the housing at one end and includes, at its opposite end, a channel that is specifically designed for receiving and supporting one of the cleaning implements.

The first cleaning implement in the exemplary embodiment is a plunger that includes a handle-mounted splash guard, the geometry of which corresponds to the shape and dimensions of the internal support member within the housing. The second cleaning implement of the exemplary embodiment is a toilet brush that also includes a handle-mounted splash guard, the geometry of which corresponds to the shape and the dimensions of the channel that is formed in the panel. Additionally, the handles of the brush and the plunger cooperate to form an assembly wherein the brush sits adjacent to the plunger within the housing. In the exemplary embodiment, the shaft of the brush is shorter than the shaft of the plunger, resulting in a configuration that places the head of the brush slightly above the head of the plunger when the device is in the closed position.

Further advantages of the present invention will become apparent to those of ordinary skill in the art upon reading and understanding the following detailed description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated into and form a part of the specification, schematically illustrate one or more exemplary embodiments of the invention and, together with the general description given above and detailed description of the preferred embodiments given below, serve to explain the principles of the invention.

FIG. 1 is an exploded view of the exemplary embodiment of the storage device of the present invention showing the construction of the housing and the interior components.

5 FIG. 2 is a perspective view of the exterior of an alternate embodiment of the device shown in FIG. 1, depicting the storage device in its assembled state and including an optional pull-out tray not shown in the other figures.

10 FIG. 3 is a front view of the exterior of the device shown in FIG. 1, depicting the storage device in its assembled state.

15 FIG. 4 is a side view of the exterior of the device shown in FIG. 1, depicting the storage device in its assembled state.

20 FIG. 5 is a cutaway side view of the device shown in FIG. 1 showing the arrangement of the cleaning implements within the housing.

25 FIG. 6 is a perspective view of the device shown FIG. 1 showing the front panel of the device in the open position.

30 FIG. 7 is a perspective view of a portion of the front panel and a portion of the housing showing the relative positions of the components that comprise the hinging mechanism of the storage device shown in FIG. 1.

35 FIG. 8 is a perspective view of the cleaning implements removed from the housing to illustrate the preferred configuration of the handles of the implements.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a device for conveniently storing a toilet brush and a plunger in single, space-saving enclosure. The exemplary embodiment shown in the Figures is designed to be placed in a relatively small space, such as one of the corners typically created by the space between a toilet and a bathroom wall or cabinet. With reference to FIG. 1, the exemplary embodiment of storage device **10** includes the following basic components: (i) a housing **12**, (ii) a detachable base **30**, (iii) a hinged front panel **40**, (iv) a brush subassembly **50**, and (v) a plunger subassembly **70**.

As shown in FIGS. 1-6, housing **12** includes an single internal chamber for storing bathroom implements. Housing **12** is somewhat triangular in profile and includes a rear vertical wall **13** that forms the tallest portion of the housing. Two vertical sidewalls **14** also form a portion of the housing and each side wall further includes a plurality of vents **20** (see FIGS. 1, 2, and 4) that pass completely through the material of the side walls and provide a means by which air may circulate through storage device **10** for the purpose of drying the items inside the enclosure and the interior of the enclosure itself. These vents may be circular, elliptical, triangular, rectangular, or any other of a variety of shapes or combinations of shapes and sizes. Plunger support **18** is a cup-like structure that extends across the uppermost portion of housing **12** and joins the two sidewalls **14** to the rear vertical wall **13**. In the exemplary embodiment, the geometry of plunger support **18** corresponds to the shape of plunger splashguard **74** and provides a platform or shelf-like structure upon which plunger subassembly **70** rests when properly situated in housing **12**. A transverse inner wall **22** extends between the two sidewalls near the bottom of housing **12** and provides both structural support to housing **12** and a support surface for drip cup **48** (see FIG. 6) which catches water draining from brush head **62** when the brush is returned to its resting position following use. The bottom portion of housing **12** behind inner wall **22** is open, as is most of the front portion of the housing (see FIG. 1), i.e., the area between the front edge of handle support **18** and the top edge of inner wall **22**.

As shown in FIG.1, a trough-like structure **24** extends transversely between the sidewalls **14** in front of inner wall **22**. The lowermost portion of trough **24** extends below the bottom edges of housing **12** and includes on either side, a rounded aperture **26** that passes completely through the material of the housing. These apertures **26** correspond to the two

pins 47 that are formed at each end of cylindrical member 43, which is found on the lowermost portion of front panel 40 (see FIG. 7). Front panel 40 may be attached to housing 12 by placing pins 47 within apertures 26. When the pins are properly situated within the rounded apertures, a functional hinge is formed that allows the user of the storage device to easily move front panel 40 between an open and a closed position. Once front panel 40 has been attached by the hinge means described above to housing 12, the housing may then be attached to base 30.

As shown in FIG. 1, on each of the sidewalls 14 of the exemplary embodiment, an aperture 20 is formed in the material of housing 12 near its bottom edge. Each of these apertures corresponds to a connecting member 36 that is formed on either side of base 30. Base 30 further comprises a substantially flat floor 32, and a raised lip 34 that surrounds floor 32, thereby forming a small reservoir for catching any water draining from the brush or the plunger. The housing and front panel assembly is attached to base 30 by aligning the front or forward portion of the housing, i.e., the front edge of trough 24, with the front edge 38 of the base and dropping the housing down on base 30. The apertures 20 align with the connecting members 36 such that when housing 12 is properly placed over and on top of base 30, the connecting members engage the apertures and the housing snaps securely into place on the base when downward force is exerted on housing 12. When the housing and the base are properly assembled, trough 24 rests in the space between support members 39. Housing 12 may be removed from base 30 by simply pressing inward on the connecting members and lifting the housing up and off of the base.

In one embodiment of the present invention, the floor 32 of base 30 is covered with or impregnated with an antimicrobial solution, preparation, or material that inhibits the growth of mold, fungus, bacteria, and/or other microorganisms. In another embodiment, a sponge or other absorbent material is placed on floor 32 to catch any fluid draining from the cleaning implements.

As shown in FIG. 2, optional tray 31 (not shown in the other Figures) may be situated within base 30. Tray 31 may be inserted into or removed from base 31 by means of a slot formed in the front portion of the base. When fully inserted into base 30, tray 31 acts as a shallow basin for catching water or fluid draining off of the brush or plunger. In one

embodiment, tray 31 may be removed from the base for cleaning by simply pulling outward on the front edge of the tray. In an alternate embodiment, tray 31 can be pulled out for cleaning but cannot be completely removed from the base. Regarding the placement of tray 31, although the exemplary embodiment shown in FIG. 2 depicts the tray mounted within base 30, other configurations are possible. For example, in an alternate embodiment, base 30 is absent from the storage device, and tray 31 is mounted or otherwise situated within housing 12. In embodiments of the present invention that include tray 31, the tray may be treated with an antimicrobial solution, preparation, or material.

As previously stated, storage device 10 is designed to accommodate both a plunger and a toilet brush. In the exemplary embodiment shown in the Figures, both the plunger and the brush components of this invention include features that make them uniquely compatible with housing 12 and front panel 40. More specifically, the handles and splashguards of the plunger and the brush are designed to fit closely together and to sit within corresponding structures included on the housing and the front panel.

As best shown by FIG. 1, brush subassembly 50 includes a handle grip 52, a splash guard 54, a shaft 56, a centrally tapped flange 58, and a brush head 62. Handle grip 52 provides a means by which a user of device 10 may hold and manipulate the brush while splash guard 54 protects the user against unwanted contact with the water from the basin being cleaned. Shaft 56 extends downward to flange 58 which provides the female threaded portion for threaded stem 60. In the exemplary embodiment, the brush head 62 is attached to flange 58 by simply threading the brush head onto the flange. In alternate embodiments, other attachment means are possible, including non-threaded attachment means. In one embodiment, brush head 62 is formed integrally with shaft 56. Once assembled, brush subassembly 50 may be secured within storage device 10 by placing the brush in channel 42 as described below.

As best shown in FIG. 1, the front wall 46 of front panel 40 further includes a channel 42, a protrusion 44, and a shelf 45. These structures accommodate and support brush subassembly 50 when the brush assembly is properly situated within housing 12. In particular, the geometry of channel 42, which is formed in front panel 40 at the end opposite cylindrical member 43, corresponds to the shape of splashguard 54 and provides a means by

which to guide the brush assembly into the front panel. In the exemplary embodiment, channel 42 further comprises two flattened portions on either side of the channel that serve as supports for brush splash guard 54. As best shown in FIG. 5, groove 57, found on the front portion of the shaft of the brush assembly, engages shelf 45 and forms an interlocking mechanism for securing the brush assembly within channel 42. This mechanism also permits brush handle grip 52 to be used as a handle to move front panel 40 into the open or closed position (see, for example, FIG. 6).

Again with reference to FIG. 1, plunger subassembly 70 includes handle grip 72, splash guard 74, shaft 76 and plunger head 92. Handle grip 72 is substantially perpendicular to shaft 76 and provides a means by which a user of device 10 may hold and manipulate the plunger while splash guard 74 protects the user against unwanted contact with the water from the basin or bowl being cleared. Shaft 76 extends downward from the handle grip to flange 78 which includes a threaded stem 80. In the exemplary embodiment, plunger head 92 includes a tapped bore 90 and may be threaded onto stem 80 (note: other attachment means are possible, including non-threaded means). Once assembled, plunger subassembly 70 may be hung within storage device 10 by moving front panel 40 to its open position and placing plunger splash guard 74 into plunger support 18 as shown in FIGS. 5 and 6. The plunger assembly may be removed from housing 12 by simply moving the front panel to the open position and lifting the plunger assembly up and out of plunger support 18.

A primary advantage of the storage device of the present invention is that two typically unsightly and awkward cleaning implements can be stored in a single, relatively compact space-saving enclosure. As shown in FIG. 8, both the brush and the plunger have been designed to fit compactly together inside the housing. More specifically, the geometry of the rear portions of brush handle grip 52 and splash guard 54 closely corresponds to the geometry of the front portions of plunger handle grip 72 and splash guard 74. Furthermore, by placing the brush in channel 42, hanging the plunger in housing 12, and moving the front panel into the closed position, the handle grips of the two devices come together to form a uniform arc that rises above the body of housing 12 (see FIGS. 2-4) and gives the appearance of a single "handle." Because, as shown in FIG. 8, the brush assembly sits in front of the plunger assembly inside the storage device, and the brush head is situated above the head of the plunger, the width and depth of the storage device need only be slightly greater than the

dimensions of the cleaning implements themselves. Therefore, the overall dimensions of storage device 12 make it suitable for placement in narrow spaces.

Regarding the space-saving features of the present invention, it should be noted that in addition to the exemplary configuration of the brush and plunger shown in the Figures, other configurations are possible. More specifically, in an alternate embodiment the relative positions of the plunger and brush are reversed, and the plunger sits or hangs in front of the brush within the housing. In another embodiment, the two cleaning implements sit or hang side by side within the housing. In still other embodiments, the cleaning implements are situated adjacent to one another in any number of possible configurations. Likewise, while the exemplary embodiment shown in the Figures depicts the brush head hanging slightly above the plunger head, in an alternate embodiment the respective positions of the plunger head and brush head are reversed with the plunger head hanging above the brush head. Numerous variations of this approach to arranging the cleaning implements within the housing are possible, and in alternate embodiments the heads and/or handles of the devices are offset relative to one another in any number of configurations that make it possible to store multiple cleaning implements in very close proximity to one another within a single housing.

Storage device 10 may be manufactured from a variety of materials by techniques known by those skilled in the art. For example, with the exception of the brush head and the plunger head (in certain embodiments), the various components of the present invention may be manufactured from solid plastic, polymer, polypropylene, polyethylene, hard rubber, or any other suitably rigid, durable, and moldable material. In most cases, manufacturing techniques such as vacuum molding or injection molding are suitable for manufacturing the components of storage device 12. The brush head and the plunger head may be manufactured by these or other widely known manufacturing techniques, if desired.

While the above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as exemplification of certain preferred embodiments. Numerous other variations of the present invention are possible, and is not intended herein to mention all of the possible equivalent forms or ramifications of this

invention. Various changes may be made to the present invention without departing from the scope or spirit of the invention.